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(19) (CA) **CANADIAN PATENT** (12)

(54) CATTLE FENCE

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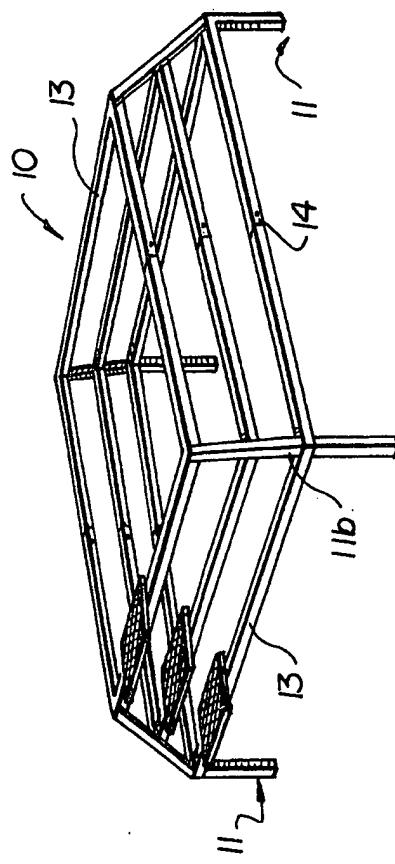


FIG. 2

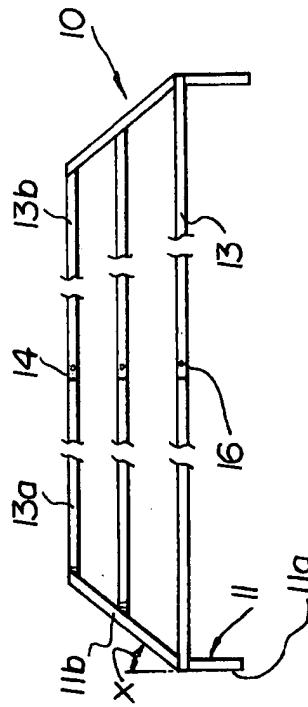


FIG. 3

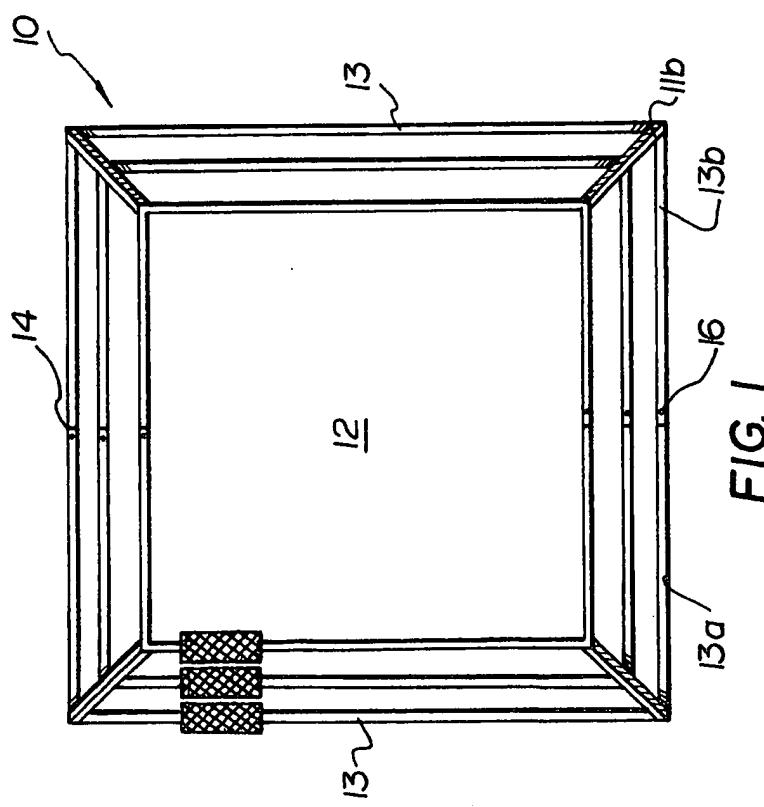


FIG. 1

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FIG. 5

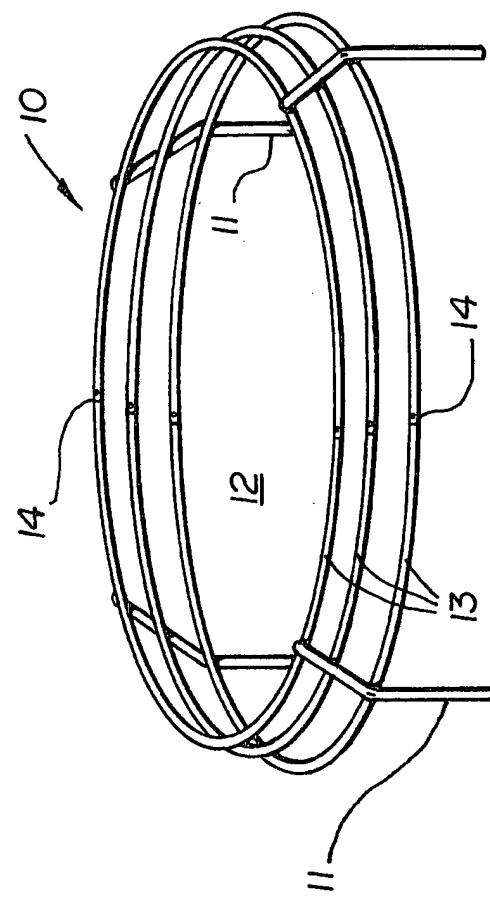
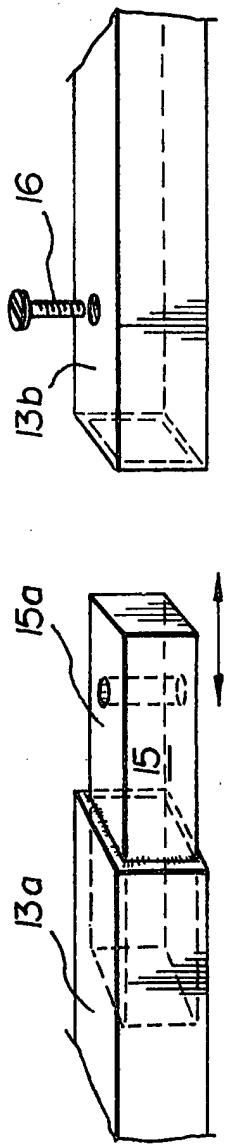


FIG. 4



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The invention relates to the construction of fences and more particularly but not exclusively to a fence designed to enclose limited areas for the purpose of preventing animal encroachment.

As is well known, it is common to find structures such as oil, gas or water well heads on agricultural land which is used principally for grazing purposes.

As is also well known, considerable damage can be caused to such structures by grazing animals, particularly cattle.

To alleviate this problem, it has been the practice to enclose such structures with fences, the most common type utilizing continuous wire or wire mesh, with vertical, steel supporting posts. The disadvantages of such conventional fencing is that cattle for example, are able to disrupt the fence within a relatively short time due to their ability to push against it and rub on it with their bodies or horns.

The present invention seeks to provide an alternative form of fence suitable for enclosing such structures formed in such a manner that animals, such as cattle, are dissuaded from contact.

Accordingly, the invention comprises a cattle excluding enclosure structure adapted to restrain entry of cattle into the area defined by the structure comprising a plurality of generally vertically disposed rigid post members each having a lower ground engaging portion and an upper inwardly inclined rail supporting portion, the lower end of the upper inwardly inclined rail supporting portion having an above-ground height approximately equal to the knee-height of a mature bovine; the upper end of said upper inwardly inclined rail supporting portion

having an above ground height at least approximately equal to the belly height of a mature bovine; a plurality of horizontally disposed rail members affixed to the post members and spanning the interval defined between adjacent of said post members, at least one member being mounted approximately at the bovine knee-height.

The invention will now be described by way of example only, reference being had to the accompanying drawings in which:

10       Figure 1 is a plan view of a typical enclosure formed in accordance with the present invention;

Figure 2 is a perspective view of the enclosure according to Figure 1;

Figure 3 is a side elevational view of the enclosure according to Figure 1;

Figure 4 is a detail view, partially sectional showing one method of interconnecting side members of the fence according to the invention, and;

20       Figure 5 is a perspective view of a second embodiment of the present invention showing an enclosure of generally circular configuration.

The preferred embodiment of the invention, to be described more particularly hereafter, with reference to Figures 1 to 4 of the attached drawings, discloses an enclosure 10, suitable for enclosing a gas or oil well head (not shown).

While a substantially square, four sided enclosure has been depicted in Figures 1 to 4, it is to be understood that the present invention lends itself to other configurations, such as rectangular, triangular, octagonal etc. in addition to a circular configuration which will be described

having regard to Figure 5.

In its preferred form, the novel fence construction utilizes metal tubing, which as will be appreciated, provides for a relatively rigid, stable and compact enclosure. In the preferred embodiment, 1½" square box tubing is used throughout, but again it will be apparent that round tubing or even angle iron could be readily substituted, or any other material able to provide, in the finished product, the necessary strength and rigidity.

10 With particular reference to Figures 1 to 4, the fence 10 comprises a plurality of rail supporting corner posts 11 set in the ground, each post 11 including a lower substantially vertical portion 11(a) and an upper angulated portion 11(b). The upper portion 11(b) being inclined relative to the lower portion 11(a) such that portion 11(b) projects or extends into the space 12 to be enclosed.

While in Figures 2 and 3 depict the corner posts 11 as comprising two separate members, joined in end-to-end relation as by welding, it will be understood that such posts could be 20 manufactured in one piece, the upper portion being simply formed as by bending to a suitable angle of inclination.

The fence is completed by providing a plurality of horizontally disposed rail members 13 spanning the interval defined between adjacent of corner posts 11. Attachment of members 12 to corner posts 11 may be as by welding or any other suitable means.

To facilitate assembly and/or disassembly in this embodiment, the rail members on two oppositely facing sides of such fence have been depicted as being detachably secured at 30 a mid-point of their length, at 14. In this regard, Figure 4

is referred to as showing a simple method of jointing adjacent sections 13(a) and 13(b) of rail members 12. As indicated previously, members 13 are tubular thus making it possible to utilize an intermediate member 15 as a joining member. Member 15 as shown, being fixedly attached as by welding within the core of section 13(a), the projecting portion 15(a) being adapted to be slidably engaged with the core of section 13(b) and securable by means of a pin or bolt 16.

While the actual dimensions of the fence according to the  
10 present invention are by no means critical, to achieve the principle objective, namely to dissuade or prevent animals from forcefully contacting the structure, several features are of importance.

Firstly, the inward inclination of the upper inwardly inclined rail supporting portion 11(b) of corner post 11 must be sufficient to dissuade animals from either rubbing against the side members 13 or leaning the weight of their bodies on those members. Therefore, in the preferred form of the present invention angle  $\alpha$  (Figure 3) is chosen within  $15^\circ$  of the vertical to  $15^\circ$  of the horizontal inclusive.  
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Secondly, in the embodiment according to Figures 1-4, it is important that the lower end of the upper inwardly inclined rail supporting portion 11(b) of post member 11, when the structure is emplaced, be restricted in its height relative to the ground. The reason for this restriction being again due to the fact that animals must be dissuaded from normal body contact with the posts or the rails. To achieve this objective, it is preferable for the post to commence its inward slope at approximately the knee height of a mature bovine. Thus, in the preferred construction of the  
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fence when emplaced, the height of portion 11(a) from the ground to the commencement of the sloping portion 11(b) is selected between 8 inches and 24 inches.

A third and relatively important structural consideration resides in the substantially vertical spacing between parallel rail members 13, in that it is preferable while any number of members can be utilized in the construction of any one side of the enclosure, that the spacing between each member be such that an animal attempting to rub its horns on an upper member 10 would contact a lower member with its nose. The spacing between members however, must not be great enough to allow an animal to insert its head between the members, therefore, in the preferred construction of the fence, spacing of rail members 13 is selected as in the range of 6 to 12 inches.

In addition, it is preferable in the practice of the present invention that the uppermost end of the upper inwardly inclined rail supporting post 11(b) has an above ground height at least equal to the belly height of a mature bovine. By attaching one of the horizontal rail members 13 to the top of post 11 at this preferred height, any attempt by an animal to step over the fence will bring its underparts into contact with the rail or top of the post and deter the animal from proceeding further. 20

Again, in practice, it has been found preferable that the vertical height of the fence, that is the above height to the top end of the post 11, or the uppermost rail member 13 be chosen within the range of 20 to 36 inches.

In connection with each range of diameters quoted heretofore, the figures provided are based on a general survey 30 of the various breeds of bovine, with particular reference

to mature animals.

Finally, the relative positioning of the lowermost rail member 13 is considered of importance to the construction according to the present invention. The lowermost of rail members 13 will preferably be located to be approximately level with the previously mentioned knee-height of a mature bovine. This will additionally ensure that member 13 is located sufficiently close to the ground such that a horned bovine could not rub its horns on the rail member without contacting the ground with its nose, which again provides a satisfactory deterrent.

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With such a fence construction, a means of access to the enclosed area may be required and while a gate could be provided, it has been found economically advantageous to simply utilize steps 17 (Figure 1), these being located at any suitable point on the periphery of the fence and fixedly attached, as by welding, to rail members 13.

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Looking now to the alternative fence construction as depicted in Figure 5, it can be seen that objects of the present invention can be realized by providing an enclosure of circular configuration. The main rail supporting posts 11 in this embodiment are identical in form to those depicted in Figures 1 to 3, however it would possibly be advantageous to form the posts with an upper curved profile, compatible with the longitudinal curvature of member 13, thus readily facilitating interconnection therewith.

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Further modifications and alternative embodiments of the invention will be apparent to those skilled in the art in view of the foregoing description. Accordingly, this description is to be construed as illustrative only and is

for the purpose of teaching those skilled in the art the manner of carrying out the invention. It is further understood that the form of the invention herewith shown is to be taken as the presently preferred embodiment. Various changes may be made in the shape, size and general arrangement of components, for example, equivalent elements may be substituted for those illustrated and described herein, parts may be used independently of the use of other features, all as will be apparent to one skilled in the art after having the benefits 10 of the description of the invention and the appended claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A cattle excluding enclosure structure adapted to restrain entry of cattle into the area defined by said structure comprising:

(a) a plurality of generally vertically disposed rigid post members each having a lower ground engaging portion and an upper inwardly inclined rail supporting portion, the lower end of said upper inwardly inclined rail supporting portion having an above-ground height approximately equal to the knee-height of a mature bovine; the upper end of said upper inwardly inclined rail supporting portion having an above ground height at least approximately equal to the belly-height of a mature bovine;

10 (b) a plurality of horizontally disposed rail members affixed to said post members and spanning the interval defined between adjacent of said post members, at least one member being mounted approximately at said bovine knee-height.

2. The structure according to Claim 1 wherein said lower end of said rail supporting portion is located between 8 and 24 inches above the ground.

20 3. The structure according to Claim 1 wherein said upper end of said rail supporting portion is located between 20 and 30 inches above the ground.

4. The structure according to Claim 1 wherein said plurality of horizontally disposed rail members are attached to said post members substantially one above the other and wherein the substantially vertical displacement between adjacent of said rail members is in the range of 6 - 12 inches.

5. The structure according to Claim 4 wherein at least one of said horizontally disposed rail members is affixed

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to the upper end of said upper inwardly inclined rail supporting portion of each said post member.

6. The structure according to Claim 1 wherein said upper inwardly inclined rail supporting member subtends at an angle within  $15^{\circ}$  of the vertical to  $15^{\circ}$  of the horizontal respectively.

7. The structure according to Claim 1 wherein said lower ground engaging portion of said post members, is substantially vertical.

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ABSTRACT OF THE DISCLOSURE

The invention comprises a cattle excluding enclosure structure adapted to restrain entry of cattle into the area defined by the structure comprising a plurality of generally vertically disposed rigid post members each having a lower ground engaging portion and an upper inwardly inclined rail supporting portion having an above-ground height approximately equal to the knee-height of a mature bovine; the upper end of the upper inwardly inclined rail supporting portion having an above ground height at least approximately equal to the belly height of a mature bovine; a plurality of horizontally disposed rail members affixed to the post members and spanning the interval defined between adjacent post members, at least one rail member being mounted approximately at the bovine knee-height.